UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH ADMINISTRATION
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

Project Surveys Date November 21, 1950 Author L. W. Orr

SUBJECT—

TITLE

WESTERN PINE BEETLE SURVEY 1950

DEADWOOD RESERVOIR-WHITE HAWK BASIN

BOISE NATIONAL FOREST

IDAHO

Forest Insect Laboratory
387 Federal Bldg., P.O.Box 731
Ogden, Utah

cc: Boise Nat'l 12/18/50

INDEX NO.—

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Boise 12/18/50

W. L. Robb, A. R. F.

S, CONTROL, Boise, Insect

Attached is a copy of Mr. Orr's report on the western pine beetle infestation near the Deadwood Reservoir.

We agree with Mr. Orr, as you no doubt will, in that an effort should be made to check and control this infestation by logging and at the same time salvage what we can of the losses.

You are of course in a much better position than we are to pass on the feasibility of obtaining bids on any of this timber from timber operators on or near the forest but we expect that because of the heavy demand for Boise Forest timber some interest can be developed depending upon the attractiveness of the offering.

Because of the need for preparing and advertising a sale or sales in this area before the start of the next field season if an attempt at timber sale control of the infestation is to be made, we have studied and discussed the situation somewhat in this office and with Mr. Orr and the following summary is offered for your review and comment:

There does not appear to be any timber survey of the area that will help in preparing the sale. We have studied aerial photos of the area and pooled our meagre knowledge of the infestation to determine whether or not some kind of a "photo-cruise" of the area could be made that would be suitable. This is one possibility and a last resort to keep in mind in case we cannot obtain better data by field methods.

Any other procedure involves winter field work if we are to advertise a sale before the field season. We believe we should attempt some sort of a winter cruise of the area in an effort to obtain more reliable data. Mr. Orr has mentioned that late February or early March would be the best time to do the work because the western pine beetle is somewhat more susceptible to winter kill than other bark beetles and we may find some mortality. It should also be mentioned here that Mr. Orr has volunteered the services of a member of his staff for any such trip that will be made, so that such entomological phases of the project can be studied and decided on the ground.

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Two suggestions have been advanced as a means of getting into the area, one by plane and the other by Sno-cat. We wish you would consider these possibilities unless you know that either or both are impractical. One of the members of this office attended a demonstration of the 4 pantoon drive Tucker Sno-cat at Alta a few days ago and it appears feasible to use such a machine to get into Deadwood and possibly also to eliminate some foot travel after reaching the guard station or whatever headquarters are used. However it seems to be the feeling among those who have seen the smaller model used (such as the one at Boise which is equipped with skiis on the front) that it is not as suitable a piece of equipment for the type of work we have in mind as is the larger model. You have had experience on the Boise with the ski model and will know its capabilities and limitations. It would cost nearly $200 to move one of the larger Forest Service Sno-cats over from Salt Lake City or Jackson, but it can be done if there is no other possible way of getting into the area.

If the matter of transportation into the area can be solved, the rest should not be too difficult. The most important thing to do is to outline the areas of merchantable timber within the infestation boundaries and within that, the areas of the various densities of timber. In this way the number of samples required can be kept to a minimum and these can be obtained by some random method within the types defined. No mapping would have to be done except what can be done directly on the aerial photos and the areas of the various types or densities can be determined later in the office using the Kail plotter. Depending upon conditions it should not require more than a week or ten days, including travel time, for a small crew of about three men to obtain the necessary field data.

There will remain to be decided such things as the number of sales to make time limits, cut per acre and the special timber sale contract clauses that will have to be set up in order to obtain the ~~necessary~~ desired removal of infested trees, salvage trees and trees susceptible to attack.

After you have had time to consider the problem we would appreciate hearing from you concerning the prospects for a winter cruise of the area, and also about the other problems involved. We hope it will be possible for one member of this office to help out on the cruise if it is made.

W. L. Robb

Attachment
PAGrossenbach:vl
cc: Mr. Orr

STANDARD FORM NO. 64

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

Office Memorandum • UNITED STATES GOVERNMENT

P.O.Box 731, Federal Bldg., Ogden, Utah

TO : W. L. Robb, Assistant Regional Forester, Ogden, Utah

DATE: November 21, 1950

FROM : L. W. Orr, Entomologist in Charge, For. Insect Laboratory, Ogden, Utah

SUBJECT: Western Pine Beetle Survey, Boise National Forest

I am enclosing two copies (one to be forwarded to the Forest) of a report on the western pine beetle infestation located southeast of Deadwood Reservoir on the Boise National Forest. This report will supplement Mr. Terrell's report of November 2 recently sent to you by Mr. Evenden, in which he presented data obtained in surveys of other areas infested by the western pine beetle on the Payette and Boise Forests.

As indicated by Evenden and Terrell, present infestation conditions on these two forests are somewhat alarming. Groups of red tops are showing up in many different places. In most instances, we have found Ips beetles to be the predominant species in the dead or dying trees, especially in pole stands and reproduction. The mountain pine beetle, Dendroctonus monticolae, and the red turpentine beetle, D. valens, are often present. In addition, injury by the needle cast fungus and by root rot seems to be very prevalent. There are only a few areas where the western pine beetle is now predominant. The Deadwood area infestation is perhaps the most aggressive.

The history of past outbreaks of the western pine beetle is that they have usually developed in stands of low vigor. It therefore seems likely that the Boise and Payette Forests may experience rather extensive losses in the near future, since there are now many ponderosa pine stands weakened by needle cast. This beetle is capable of increasing in abundance very rapidly, partly because two complete generations will develop each year. I hesitate to recommend direct control, such as by cutting and burning, because such control work has not been very effective in the past. I do, however, urge that an effort be made to concentrate logging operations in those areas where losses are most conspicuous. I realize that this may result in exceeding your current cutting budget but unless this can be done I am afraid that normal logging plus beetle losses will soon greatly exceed the allowable cut, with the result that reserve stands will be rapidly depleted.

I wish we knew more about the tree characteristics that indicate susceptibility to beetle attack in this region. Perhaps it may be possible to work out an adaptation of the California risk classification but I don't believe we are in a position to propose any very definite

marking rules at present. About the best we can do is to suggest cutting on an area or stand basis, giving first attention to those stands where insects, and perhaps needle cast, are now causing losses.

In view of the above, I am not recommending a request for funds to do direct control work in 1951. If it proves to be impossible to interest any of the logging operators in an attempt to do salvage logging we may have to reconsider this problem later in the year.

L. W. Orr

cc: Mr. Robb - Forest Supervisor
Mr. Evenden
Dr. Beal (2)

copy to Boise
12/18/50

Forest Insect Laboratory
387 Federal Bldg., P.O.Box 731
Ogden, Utah

By L. W. Orr

Western Pine Beetle Survey 1950

Deadwood Reservoir-White Hawk Basin

Boise National Forest

An aggressive infestation by the western pine beetle, Dendroctonus brevicomis, is present in a stand of ponderosa pine located in T.11 N., R.7E., southeast and east of the Lower Deadwood Guard Station on the Boise National Forest. This area was examined by the writer on October 10 in company with Ranger L. H. Garner, at which time it was decided that an aerial reconnaissance would be the quickest and most economical way of determining the extent of the infestation.

Mr. Wendell Moran, from the Supervisor's Office in Boise, had made a ground examination of the area on October 3 and Mr. Joel Frykman, also of the Boise office, flew over the area on October 13. Both reported a concentration of dead and dying timber on the north side of White Hawk Creek.

On October 19, Mr. Paul Grossenbach, Mr. Henry Thompson, and the writer flew over the area in a Forest Service plane piloted by Mr. Clare Hartnett. We observed numerous dead and dying ponderosa pine trees along Wilson and Warm Springs Creeks and a conspicuous concentration of such trees on the slope north of Whitehawk Creek. In fact, this infestation is considerably heavier than anything observed elsewhere on the Payette and Boise Forests.

Our ground examination on October 10 showed that most of the infestation by the western pine beetle occurred in 1949 and 1950. Many trees were currently infested, with large numbers of larvae present within the bark, indicating second generation attack in 1950. Ips and mountain pine beetles were present in some of the smaller trees. Injury by the needle cast fungus is prevalent in the area and has evidently contributed to weakening of the trees, most of which are mature or overmature. The site appears to be poor. This combination of general decadence and infestation by the western pine beetle may result in loss of most of the ponderosa pine in the drainage.

A 3-man survey crew, with Henry Thompson as crew leader, spent one day in the area. On a total of 88 acres of sample strip, of which 82 acres were in ponderosa pine type, they found 27 first generation and 27 second generation attacks by the western pine beetle in 1950. In addition, they recorded 17 ponderosa pine trees that had been killed by Ips or the mountain pine beetle in 1950; most of these were relatively small trees. Unfortunately, most of the strip lines were run north of the area of heaviest infestation, with the result that the survey estimate is probably low. Applying these data to the ponderosa pine type sampled by the strip lines gives us the following:

Area	Acres sampled	Infested trees per acre			Current inf.
		1st. gen.	2nd. gen.	Total 1950	by 2nd. gen.
Deadwood	3280	0.329	0.329	0.658	1080

As indicated above, the area sampled by the strip lines did not include all the area that is infested, and perhaps not even the most heavily infested portion of it. It is therefore probable that there are at least 1500 and perhaps 2000 second generation attacks in the area between White Hawk Basin and Deadwood Reservoir.

It is very probable that this infestation by the western pine beetle will spread into additional area and be very destructive unless something can be done to check it. Artificial control of this bark beetle has never produced very lasting results when attempted in Oregon and California; therefore, we hesitate to recommend a control project at this time. We believe that a better plan would be to initiate salvage logging operations as soon as possible to take out infested trees and trees that are obviously of low vigor. This may result in almost a clear cut of certain areas. The western pine beetle characteristically attacks trees that are low in vigor, especially during the early stages of an outbreak. On the Boise, however, the beetles have not shown so definite a preference for weakened trees and it may be necessary to remove a rather high proportion of the stand to insure leaving only those that can resist the insects.

If there is no possibility of beginning a logging operation in the area within the next year, consideration should be given to attempting control by direct methods. The only method that we can now recommend is the old cut, peel, and burn treatment. With present labor costs this would be almost prohibitive. The use of penetrating sprays has not proved very effective with this insect, probably because the larvae develop within the bark instead of between the bark and wood.

L. W. Orr
November 20, 1950